Statistical Report 1990

Sexually Transmitted Disease Control

Alberta
HEALTH

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Executive Summary

Sexually Transmitted Disease (STD) Control provides a comprehensive program for the control of STD in Alberta. The 1990 report provides data on the distribution and trends of the notifiable infections as well as information on programs for the control of STD including HIV and AIDS.

The list of notifiable STD includes non-gonococcal urethritis/mucopurulent cervicitis (NGU/MPC), *Chlamydia trachomatis*, *Neisseria gonorrhoeae*, syphilis, chancroid and lymphogranuloma venereum. Although AIDS is not reportable to STD Control, information on this disease is also included in this report.

The most frequently reported infection during 1990 was once again *Chlamydia trachomatis* with an incidence of 300.1 per 100,000 population. This was followed by NGU/MPC with a rate of 149.52/100,000. The incidence of *Neisseria gonorrhoeae* continues to decline dramatically with the lowest rates on record. However, increasing gonococcal resistance from 3.3% in 1989 to 9.2% in 1990 is similar to patterns emerging in other areas of Canada. In 1990, there was a 22% increase in the number of cases of syphilis with 72% of the cases being noninfectious.

The presence of STD in prepubertal children is considered an indicator of child sexual abuse until proven otherwise. In 1990, there were 20 cases of STD in children age 1 to 9, a 26% decrease over the previous year.

Diagnostic and treatment services are available through clinics in Calgary and Edmonton. The Fort McMurray Clinic operates under the auspices of the Health Unit serving that city and surrounding areas. There were 22484 clients seen in the three clinics, a 4.4% decrease from the previous year.

Dissemination of STD information to both public and professional audiences is carried out by the Education Unit. A total of 763 sessions reached 17,290 people. The major focus in 1990 was to target groups that traditionally had limited access to STD information. A significant amount of work was done in the aboriginal communities. The education unit is also responsible for calls from the public for both STD and HIV/AIDS information. In November 1990, the toll free AIDS line was expanded to become an AIDS/STD information line. The accessibility and acceptability of the system is continually demonstrated by a stable monthly call rate with 95% of the calls being answered the first time a call is made.

The Clinical Investigation Unit with a staff complement of one laboratory technician and a clinical research nurse completed a successful year of operation actively participating in STD related research.

STD Control also provides consultation to physicians and epidemiologic services that includes contact tracing for STD including HIV infections. These services are carried out collaboratively by the central control office in Edmonton, the clinics and a mobile unit.

Incidence of *Neisseria Gonorrhoeae*

A dramatic 38% decrease in the number of cases of *Neisseria gonorrhoeae* was seen in 1990. The rate of 55.2 per 100,000 population is the lowest on record. Although, females aged 15 -19 had the highest age and gender specific rate of 287.65 per 100,000 population, this is a 44% decline from 1989. Males aged 15 – 19 and 20 – 24 experienced similar declines of 45% and 44% respectively. The smallest decrease, 27%, was seen in women aged 20 – 24. The male to female ratio of 1:1 is unchanged since 1988.

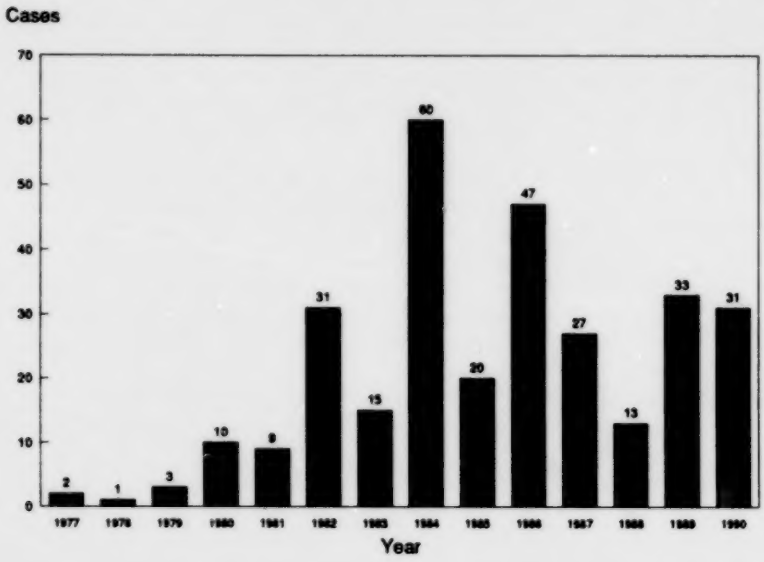
Although the incidence of gonorrhea has declined worldwide in recent years, gonococcal resistance to penicillin and tetracycline has become more prevalent. In 1990, there were 31 cases of penicillinase producing *Neisseria gonorrhoeae* similar to the 33 cases reported in 1989. However, the other two types of antibiotic resistance being monitored, chromosomally mediated resistant *N. gonorrhoeae* (CMRNG) and tetracycline resistant *N. gonorrhoeae* (TRNG) have increased. Of the isolates tested, 16 were CMRNG and 80 were TRNG. This overall resistance of 9.2% is a three fold increase from 1989.

Table 1 ***Neisseria gonorrhoeae*** **Cases and Rates by Age and Sex, Alberta, 1990**

	Male		Female		Total	
Age	**Cases**	**Rate***	**Cases**	**Rate***	**Cases**	**Rate***
1 - 4			1		1	
5 - 9			3	6.87	3	3.25
10 - 14			15		15	
15 - 19	94	101.73	254	287.65	348	192.58
20 - 24	222	225.83	239	249.73	461	237.75
25 - 29	158	136.2	96	81.98	254	108.96
30 - 39	147	63.6	68	30.23	215	47.14
40 - 59	46	17.59	16	6.32	62	12.05
60+	12	8.63			12	3.89
Age not stated	4		5		9	
Total	**683**	**55.2**	**697**	**56.54**	**1380**	**55.87**

*Rate per 100,000 population

Figure 1 Cases of Penicillinase Producing Neisseria gonorrhoeae (PPNG) in Alberta, 1977 – 1990



Incidence of Syphilis

The 90 cases of syphilis reflects a 22% increase over 1989. However, the number of cases of infectious syphilis (primary, secondary and early latent) declined from 20 to 16 accounting for only 18% of the total. These small numbers are an indication of how well syphilis is controlled in Alberta. The infectious cases are not primarily occuring in high risk HIV individuals as has been reported in the United States.

The rate of 3.64 per 100,000 population is comparable to 1989. These two years have the lowest rates on record.

Table 2 Syphilis Cases and Rates by Age and Sex, Alberta, 1990

	Male		Female		Total	
Age	**Cases**	**Rate***	**Cases**	**Rate***	**Cases**	**Rate***
15 - 19	1	1.08	1	1.13	2	1.1
20 - 24	3	3.05	3	3.13	6	3.09
25 - 29	9	7.75	4	3.41	13	5.57
30 - 39	21	9.08	6	2.66	27	5.92
40 - 59	11	4.2	8	3.16	19	3.69
60+	11	7.91	12	7.09	23	7.47
Total	**56**	**4.52**	**34**	**2.75**	**90**	**3.64**

*Rate per 100,000 population

Incidence of *Chlamydia trachomatis*

The total number of cases and the overall rate of *Chlamydia trachomatis* declined 4% and 6% respectively over 1989. As in the previous year the highest age and gender specific rate occurred in young women aged 15 – 19 with a rate of 2414.49 per 100,000 population followed by females aged 20 – 24 with a rate of 2224.66 per 100,000 population. Although the incidence of disease in 15 – 19 year old females demonstrated the same decrease as in the total population, the incidence of infection in 20 – 24 year old women increased by 4%. There was virtually no change in incidence for males aged 20 – 24 and females aged 25 – 29 from the previous year.

The disproportionate 3:1 ratio of disease in women compared to men is unchanged from 1989. Again, there is a continuing concern that a large number of male partners of these positive women are not being tested and likely not treated. This adds significantly to the pool of untreated disease and continuation in the cycle of re-infection.

The incidence in children under 1 year is attributed to perinatal transmission and emphasizes the importance of screening high risk pregnant women. The 16 cases in children aged 1 to 9 is an indicator of child sexual abuse. Although this is a decrease of 27% over 1989 continuing vigilance by primary health care providers is essential.

Table 3 ***Chlamydia trachomatis*** **Cases and Rates by Age and Sex, Alberta, 1990**

	Male		Female		Total	
Age	**Cases**	**Rate***	**Cases**	**Rate***	**Cases**	**Rate***
<1	10		6		16	
1 - 4	3	6.01	11	36.2	14	20.72
5 - 9	1		1		2	
10 - 14	4		85		89	
15 - 19	271	293.29	2132	2414.49	2403	1329.82
20 - 24	760	773.14	2129	2224.66	2889	1489.94
25 - 29	428	368.96	796	679.76	1224	525.09
30 - 39	276	119.42	338	150.28	614	134.64
40 - 59	53	20.27	48	18.97	101	19.63
60+	6	4.31	9	5.32	15	4.87
Age not stated	11		34		45	
Total	**1823**	**147.34**	**5589**	**453.43**	**7412**	**300.1**

*Rate per 100,000 population

Incidence of Non-Gonococcal Urethritis/Mucopurulent Cervicitis

In 1990 there was a 15% decrease in the overall incidence of NGU/MPC from 175.99 per 100,000 population to 149.52. The largest decrease was noted for females where there were 228 (17%) fewer cases than the previous year and a comparable 18% decline in rate. Males aged 20 – 24 and 25 – 29 account for the two highest age and gender specific rates. The male to female ratio of 2.2:1 is in marked contrast to that of *Chlamydia trachomatis* (1:3) and again emphasizes that symptomatic men present for treatment while women are diagnosed through organism identification.

Table 4 Non Gonococcal Urethritis/Mucopurulent Cervicitis Cases and Rates by Age and Sex, Alberta, 1990

	Male		Female		Total	
Age	**Cases**	**Rate***	**Cases**	**Rate***	**Cases**	**Rate***
10 - 14	6	6.55	8	9.25	14	7.86
15 - 19	278	300.86	298	337.48	576	318.76
20 - 24	751	763.98	385	402.29	1136	585.86
25 - 29	671	578.44	221	188.72	892	382.66
30 - 39	566	244.91	149	66.25	715	156.79
40 - 59	222	84.92	44	17.39	266	51.71
60+	18	12.95	1	0.59	19	6.17
Age not stated	58		17		75	
Total	**2570**	**207.72**	**1123**	**91.1**	**3693**	**149.52**

*Rate per 100,000 population

Notification by Reporting Agencies

The distribution of notifications received from physicians and the STD clinics for *Neisseria gonorrhoeae*, *Chlamydia trachomatis*, and non-gonococcal urethritis/mucopurulent cervicitis is unchanged from 1989.

Of the 1380 cases of laboratory confirmed *Neisseria gonorrhoeae* 74% were from physicians and 26% from the three clinics in Calgary, Edmonton and Fort McMurray. This is a decrease of 37% from physicians and 39% from the clinics and reflects the decline in disease incidence. The smallest decrease (17%) is seen in the reports received from Fort McMurray Clinic. 103 of the 1021 positive laboratory reports for *N. gonorrhoeae* taken by physicians did not result in a notification being received. This represents a 10% deficit in reporting by physicians.

Notification of laboratory confirmed *Chlamydia trachomatis* was received for 7412 patients. 86.5% of notifications are for patients seen by physicians. Included in this are 584 (9%) cases where notification was not received. The STD Clinics combined reported 13.5%.

In contrast to gonorrhea and *Chlamydia trachomatis*, the STD Clinics report a significantly larger percentage of the cases of NGU/MPC. The clinics combined reported 2054 of the 3693 cases or 55.5%. The Fort McMurray Clinic reported 2.7 times more incidents of NGU/MPC than the previous year.

Figure 2 Percentage of Reported Cases of Neisseria gonorrhoeae by Reporting Agency, Alberta, 1990

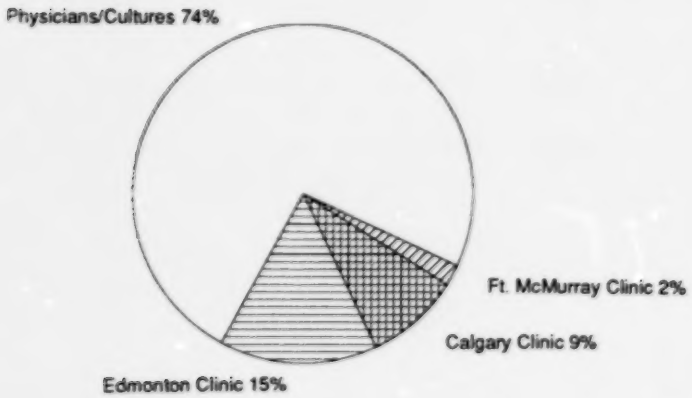


Figure 3 Percentage of Reported Cases of *Chlamydia trachomatis* by Reporting Agency, Alberta, 1990

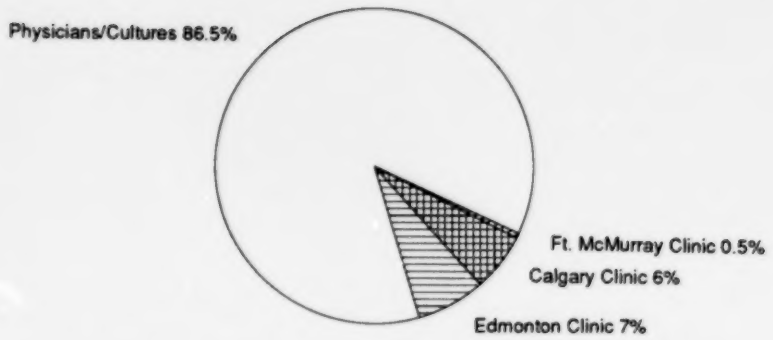
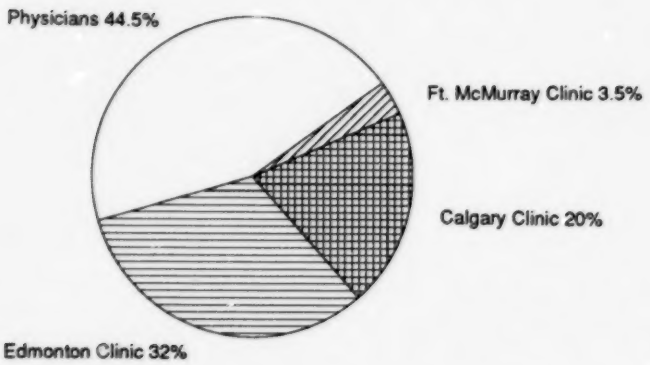


Figure 4 Percentage of Reported Cases of Non-Gonococcal Urethritis/Mucopurulent Cervicitis by Reporting Agency, Alberta, 1990



Trends in Sexually Transmitted Diseases Since 1950

The true incidence of STD is underestimated due to under reporting and the large number of non-notifiable diseases. At minimum, non-notifiable infections such as *Herpes simplex* and *Human papilloma virus* (venereal warts) likely occur with the same frequency as reportable diseases.

Neisseria gonorrhoeae continued it's downward trend that began in 1982 with a dramatic 38% fewer cases in 1990 compared to 1989. Increasing numbers of resistant *Neisseria gonorrhoeae* are being reported with gonococcal resistance (all types) now exceeding 3% for Canada and for some areas as high as 20 – 30%. In Alberta, there has been an increase from 3.3% in 1989 to 9.2% in 1990 and because of this increase, it is time to reconsider primary gonococcal therapy.

The incidence of syphilis increased by 22% over 1989. However, this increase was in the noninfectious late latent category.

The number of cases of *Chlamydia trachomatis* decreased by only 4% from 1989. However, non-gonococcal urethritis/mucopurulent cervicitis showed a more significant decline of 15% from 4277 cases in 1989 to 3693 in 1990.

Figure 5 **Incidence Rate per 100,000 Population for Syphilis, *Neisseria gonorrhoeae*, *Chlamydia trachomatis* and Non-Gonococcal Urethritis/Mucopurulent Cervicitis, 1950 – 1990, Alberta**

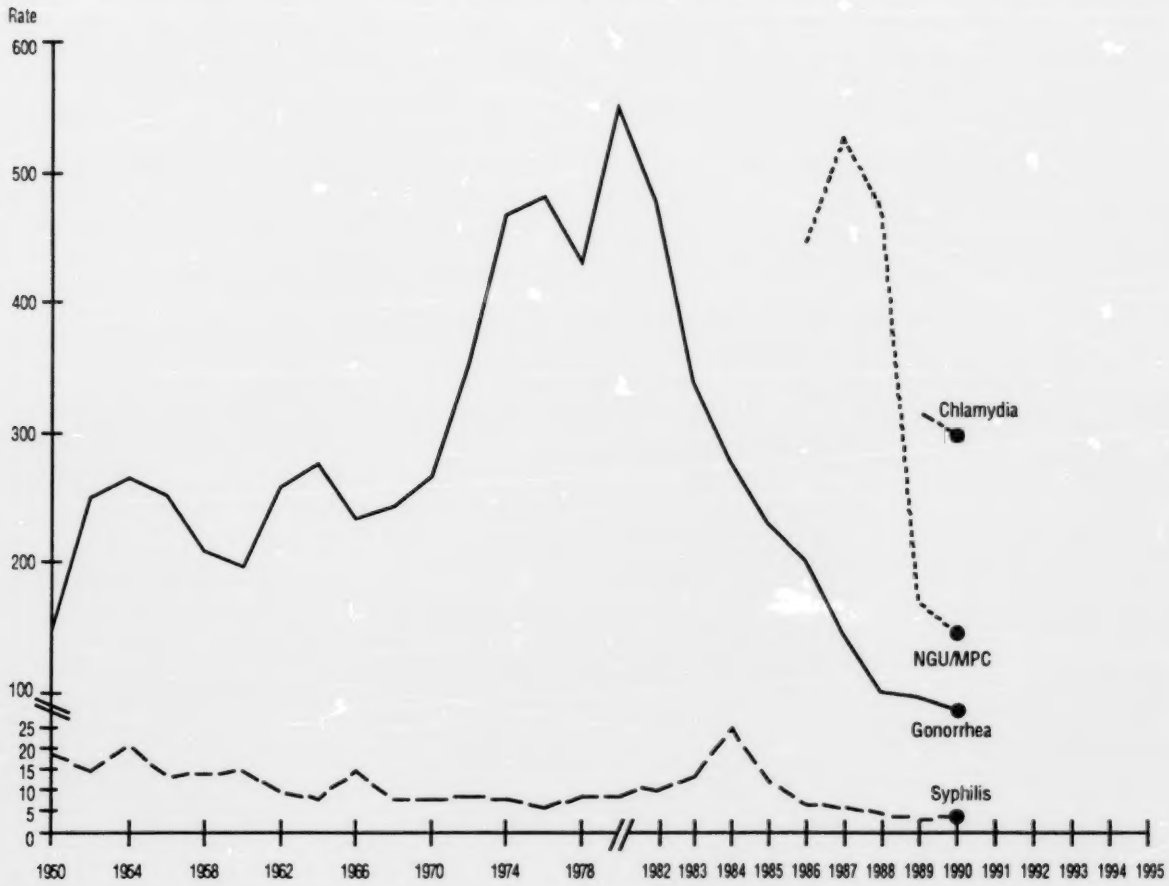


Table 5 **Syphilis, *Neisseria gonorrhoeae*, Non-gonococcal urethritis/Mucopurulent cervicitis and *Chlamydia trachomatis* Cases and Rates per 100,000 Population, Alberta, 1950 – 1990**

	Gonorrhea		Syphilis		NGU/MPC		Chlamydia	
Year	Cases	Rates	Cases	Rates	Cases	Rates	Cases	Rates
1950	1981	152.0	165	18.1				
1952	2450	251.8	135	13.9				
1954	2819	266.7	212	20.1				
1956	2842	253.0	145	12.9				
1958	2548	211.3	167	13.8				
1960	2560	198.3	186	14.4				
1962	3560	260.0	134	9.8				
1964	3953	276.7	110	7.7				
1966	3447	235.7	208	14.2				
1968	3729	244.4	118	7.7				
1970	4290	268.1	134	8.0				
1972	5842	353.2	143	8.6				
1974	8036	466.9	136	7.8				
1976	8657	480.3	108	5.7				
1978	8451	430.9	165	8.4				
1980	11474	547.8	181	8.6				
1981	11692	540.2	255	11.8				
1982	11066	476.3	225	9.7				
1983	8021	339.7	306	13.0				
1984	6712	279.9	574	23.9				
1985	5690	233.1	290	11.9				
1986	4991	203.0	162	6.7	11051	448.7		
1987	4107	146.9	132	5.5	12753	527.9		
1988	2536	104.2	110	4.6	11567	475.5		
1989	2217	91.2	74	3.0	4277	175.9	7727	317.95
1990	1380	55.9	90	3.6	3693	149.5	7412	300.10

Acquired Immunodeficiency Syndrome (AIDS)

Since Alberta reported its first case of AIDS in 1983, there has been a cumulative total of 303 cases. Throughout this section, the numbers have been updated to accurately reflect previously unreported cases diagnosed in earlier years. During 1990, there were 64 new cases, a decrease of 21% over the 81 that occurred in 1989. This represents not only cases reported in each calendar year, but also individuals whose date of onset was in that calendar year. For the first year since reporting began, there has been a decrease in the number of cases reported. This may reflect not only a decrease in the rate of transmission but also the use of effective drugs such as zidovudine on slowing the rate of progression of HIV infection. Another possible explanation might be the establishment of an equilibrium between the reservoir of infection and the population at risk. Or it could simply represent a normal variation in the incidence of disease and it would be unwise to assume that a single year's experience represents a trend. On a regional basis, Calgary continues to have the highest new (58%) and cumulative number of cases in the province. The age distribution of patients at diagnosis has not changed.

The distribution of AIDS cases by risk behaviour or exposure has similarly not changed dramatically with the exception of injection drug users. For the first time ever, this group accounted for 5% of new cases in 1990 for a cumulative proportion of 2%. Although the numbers in this group are very small, they can be expected to increase over the next few years.

The primary presenting diagnosis for patients has not significantly changed although the overall survival has increased from 37% to 43%. This no doubt is a reflection of the earlier institution of zidovudine and improved diagnosis and management of not only opportunistic infections, but malignancies associated with this disease.

Figure 6 New AIDS Cases by Year of Diagnosis, Alberta, 1983 – 1990

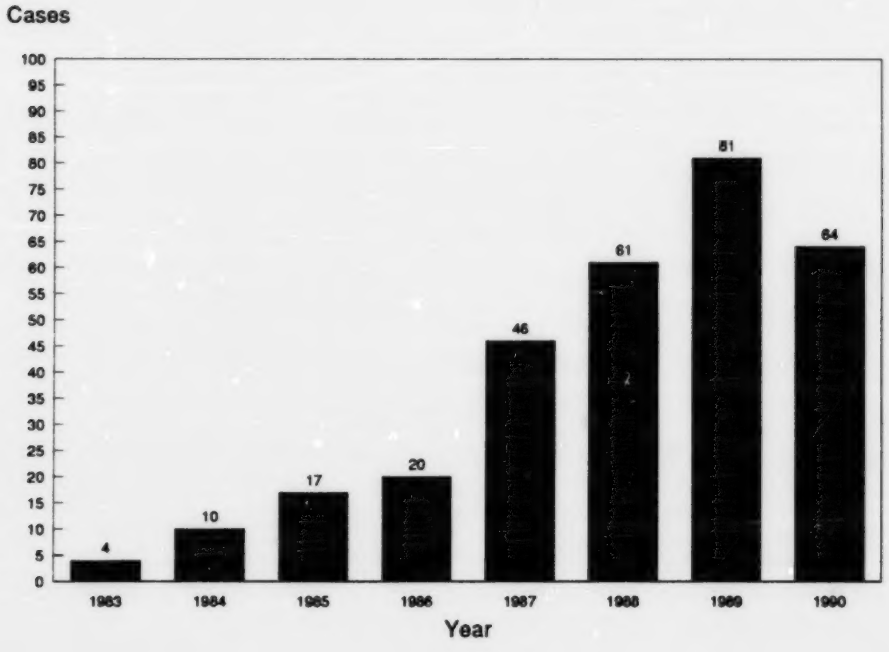


Table 6 New and Cumulative AIDS Cases by Location, Alberta, 1983 – 1990

Location	New Cases	(%)	Total Cases	(%)
Calgary	37	(58)	179	(59)
Edmonton	18	(28)	90	(30)
North*	2	(3)	15	(5)
South	7	(11)	19	(6)
Total	**64**		**303**	

*Refers to the City of Red Deer and North

Table 7 AIDS Patients Primary Diagnosis and Status, Alberta 1983 - 1990

	Total Cases		Status*			
Primary Diagnosis	**Number**	**(%)**	**Alive**	**(%)**	**Dead**	**(%)**
Pneumocystis carinii pneumonia (PCP)	157	(52)	67		90	
Kaposi's Sarcoma (KS)	38	(13)	19		19	
PCP & KS	13	(4)	2		11	
Other opportunistic infections	62	(20)	26		36	
Other malignancies	9	(3)	6		3	
HIV wasting	14	(5)	8		6	
HIV encephalopathy	8	(3)	2		6	
Other	2	(1)	0		2	
Total	**303**		**130**	**(43)**	**173**	**(57)**

Figure 7 Ages of AIDS Patients, Alberta, 1983 – 1990

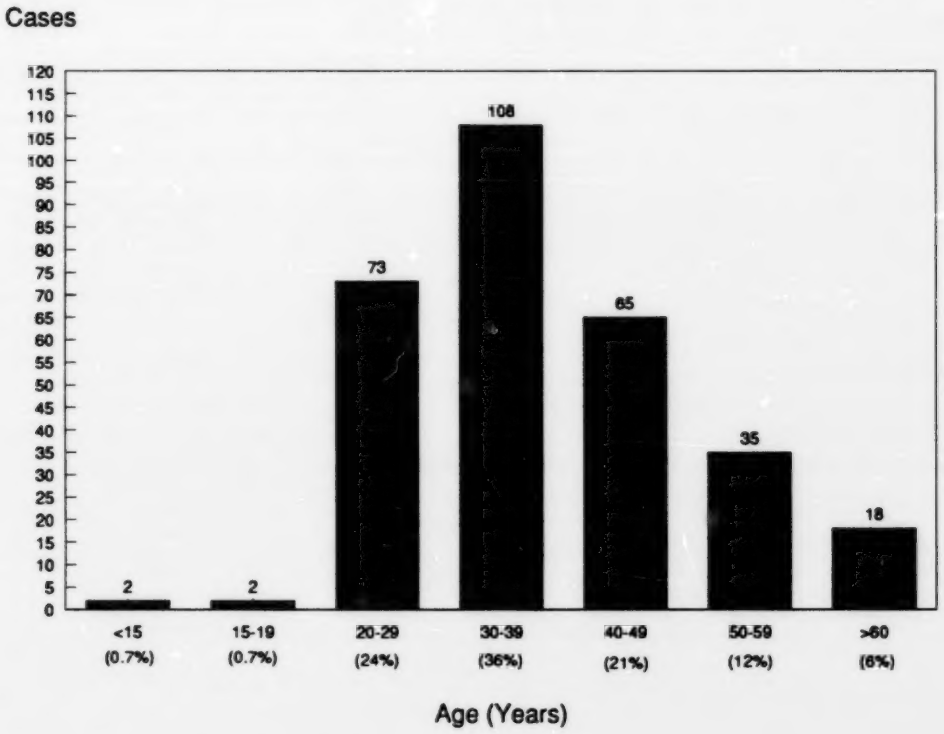


Figure 8 **Cumulative AIDS Cases by Risk, Alberta, 1983 – 1990**

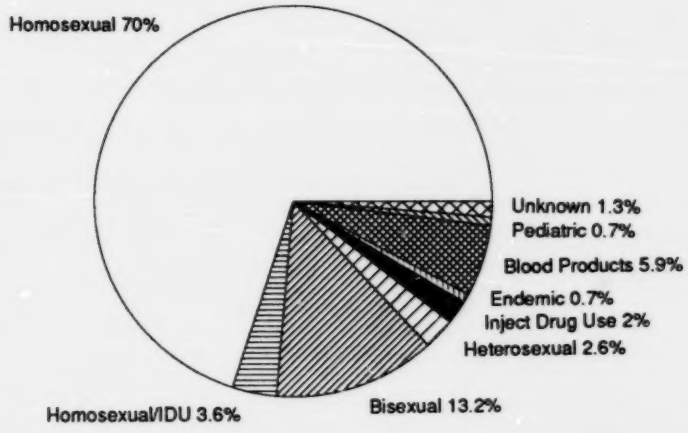
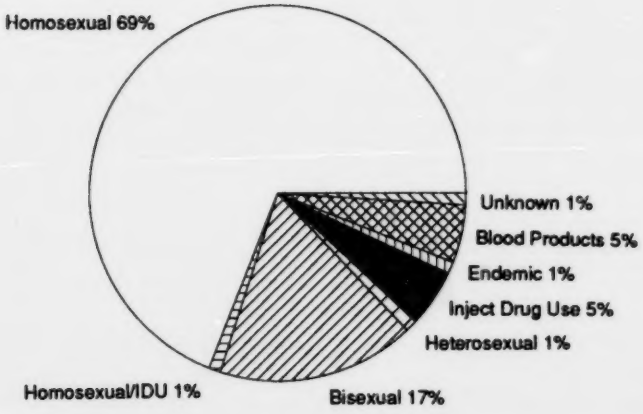


Figure 9 **New AIDS Cases by Risk, Alberta, 1990**



Human Immunodeficiency Virus (HIV) Serologic Testing

HIV seropositivity is not a notifiable condition in Alberta. Serologic testing for HIV is performed by the Provincial Laboratories of Public Health and the Canadian Red Cross Blood Transfusion Service Laboratories in both Edmonton and Calgary. These laboratories report non-nominal epidemiologic information to Communicable Disease Control and Epidemiology, Alberta Health.

Information on test results are given in Table 8. The number of tests performed is slightly higher in 1990, but the percentage positive has decreased from 2.5% to 1.5%. This likely reflects increased testing in individuals at lower risk. The dramatic decrease in the proportion of positive blood donations affirms the effectiveness of pre-donation counselling and self deferral of individuals with risk factors.

Homosexual men continue to comprise the largest group of seropositive individuals (Table 9). Injection drug users demonstrated the greatest increase from 1989 to 1990 in proportion positive. This reflects an increase in the number being tested and also in the number of positives among those being tested. Individuals whose risk factor is receipt of blood products has steadily declined since 1987. Since most of those exposed prior to the 1985 introduction of routine blood screening should have been tested, this category is expected to become increasingly smaller.

A cumulative total of 57 women have been found to be HIV seropositive. No risk information was available for 15. Of the remaining 42, 24 acquired infection through heterosexual contact, 15 through receipt of blood or blood products, 2 by injection drug use and the remaining case was from an endemic region.

The self selection of those seeking testing makes any generalizations about prevalence of infection in risk groups of limited value. However, the level of infection appears to be decreasing in homosexual men, but increasing among injection drug users and heterosexuals. Persons who continue to engage in unprotected sexual contact with multiple partners must recognize that they are placing themselves at risk.

Table 8: HIV Serologic Testing, Alberta, 1986 – 1990

Year	Provincial Laboratory		Red Cross	
	Total Tested	Number Positive (%)	Total Tested	Number Positive (%)
1986	2156	212 (9.8)	156304	26 (0.017)
1987	12862	319 (2.5)	122443	6 (0.005)
1988	12786	232 (1.8)	123782	2 (0.002)
1989	13262	331 (2.5)	122342	6 (0.005)
1990	16612	253 (1.5)	125503	1 (0.001)
Total	**57678**	**1347 (2.3)**	**650374**	**41 (0.006)**

Table 9: HIV Seropositivity by Risk Factor and Year, Alberta, 1986 – 1990

Risk Factor	1986	1987	1988	1989	1990	Cumulative (%)
Homosexual	163	203	185	192	171	914 (67.9)
Blood recipient	7	36	16	17	8	84 (6.2)
Heterosexual		6	4	8	10	28 (2.1)
Other	6	17	2	28	18	71 (5.3)
Injection drug use	2	5	5	8	15	35 (2.6)
Not stated	34	52	20	78	31	215 (16.0)
Total	**212**	**319**	**232**	**331**	**253**	**1347**

Contact Information and Investigations

Appropriate case management of patients with STD includes eliciting information on sexual partners who may be infected. The amount of information and the quality of this information has been declining in recent years. The following table outlines the number of notifications received as well as the number of contacts given and the ones for whom sufficient information was provided to allow us to initiate contact tracing. Physicians are only able to elicit sufficient information on 0.3 individuals per notification whereas the clinics obtain this information on 0.7 individuals per notification.

With the decrease in incidence of gonorrhea there is an associated decline in the number of contact investigations carried out. 79% of the 1742 contact investigations initiated were located. The reason for the dramatic decrease in the ability of Fort McMurray to locate contacts remains unclear. There was an increase of 35% in the number of investigations carried out for positive laboratory tests. Investigation is initiated for every reactive syphilis serology where there is no recorded treatment. As well, individuals with laboratory confirmed *N. gonorrhoeae* and *C. trachomatis* who are identified as being at a significant risk, and for whom treatment has not been confirmed, are also investigated. 95% of these investigations are completed with the individual located and treated appropriately.

Table 10 **Number of Contacts Listed on Notifications Received for Confirmed Cases of *Neisseria gonorrhoeae*, NGU/MPC, *Chlamydia trachomatis* and Syphilis, Alberta, 1990**

Reporting Agency	Total Notification Received	Contacts – Total Listed on Notification	Contacts – Sufficient Information for Investigation
Physicians	8407	5237	3179
Edmonton Clinic	1907	1931	1067
Calgary Clinic	1300	1298	1099
Ft. McMurray Clinic	184	175	138
Total	**11798**	**8641**	**5483**

Table 11 **Number and Outcome of Investigations Carried Out by Sexually Transmitted Disease Clinics, Alberta, 1990**

	Contact Investigations			Positive Tests* Investigations		
Clinics	Located	Closed/ Unlocated	Remaining Open	Completed	Remaining Open	Total
Edmonton	378 (70%)	140	26	721	18	1283
Calgary	570 (94%)	23	16	563	6	1178
Ft. McMurray	36 (51%)	31	3	41	12	123
Mobile	393 (76%)	73	53	867	83	1469
Total	**1377 (79%)**	**267**	**98**	**2192**	**119**	**4053**

*Follow-up to positive laboratory reports

Sexually Transmitted Disease Clinics — Patient Utilization

There was an overall decrease of 4.4% in clinic utilization for 1990. This ranged from an increase of 26.5 % and 10.7 % for new admissions and total visits to the Fort McMurray Clinic to a decrease of 2.3% and 2.5% for new admissions to the Edmonton and Calgary Clinics respectively. Total visits to these two clinics also fell marginally – 2.9% in Edmonton and 7.2% in Calgary.

Decreasing patient visits have paralleled the decrease in incidence of gonorrhea presumably because the public primarily perceives the STD Clinic as dealing with that infection. Further public education and awareness is required to stress the scope of sexually transmitted diseases and the services available at the clinics.

HIV infections continue to have a large impact on the provision of service by the Edmonton and Calgary Clinics. This range of services includes HIV testing including pre and post test counselling as well as continuing care for HIV positive individuals. HIV related visits accounted for 21.9% and 18.6% of all visits for Edmonton and Calgary respectively. This demonstrated an increase of 5.4% and 9.5% for each of these two clinics.

Table 12 Patient Utilization of STD Clinics Alberta, 1990

Patient Visits	Edmonton	Calgary	Ft. McMurray	Total
New Admissions	3307	3104	392	6803
HIV related visits	2802	1685	26	4513
Total Visits	**12801**	**9073**	**610**	**22484**

Sexually Transmitted Disease Clinics — Serologic Tests

The total number of serologic tests undertaken at the clinics remains stable. However, a 13% increase in HIV testing was offset by a 12% decrease in syphilis serology. These figures again, reflect the needs of our changing patient population.

No comment can be made on reactive syphilis serology as the majority will be a reflection of old disease. For similar reasons, the number of positive hepatitis B markers is not given as this would be of little value unless broken down by specific markers. This is beyond the scope of this report.

Significantly, males more than females accessed the clinics for HIV serology and also were reported to have reactive serology more frequently. This again demonstrates the higher prevalence of disease among homosexual and bisexual males although this is slowly changing as we see a shift towards increased prevalence amongst injection drug users and the heterosexual population.

Table 13: Serologic Testing at STD Clinics, Alberta, 1990

		Syphilis		HIV Antibody		Hepatitis B	Total
		Male	Female	Male	Female		
Edmonton	Taken	3401	1982	668	332	525	6908
	Positive (%)	171 (5)	74 (4)	30 (5)	1 (0.3)		
Calgary	Taken	2963	1545	502	265	215	5490
	Positive (%)	133 (5)	33 (2)	16 (3)	2 (0.7)		
Ft. McMurray	Taken	265		21	0	19	305
	Positive (%)	3(1)		0	0		
Total		**10156**		**1788**		**759**	**12703**

Sexually Transmitted Disease Clinic Laboratory Investigations

The most frequently performed laboratory procedures carried out in each clinic are demonstrated in the accompanying table. Each STD clinic has onsite access to microscopes. All nurses have the capability to prepare and interpret methylene blue and gram staining of urethral and endocervical smears, darkfield microscopy and wet mount examinations. All other laboratory procedures are carried out by the Provincial Laboratories in Calgary and Edmonton.

Significant changes in 1990 include a 14% increase in the number of chlamydia specimens obtained from females in the Edmonton Clinic. This increase in testing is accompanied by an increase in prevalence from 7.2% to 9.2%. The prevalence amongst males in Edmonton remained constant at 6.6%. A smaller patient population base in Calgary is reflected by a slight decrease in specimens submitted, but a relatively stable prevalence of 7.3% and 7.5% for females and males respectively. The figures are comparable for Fort McMurray.

The prevalence of gonorrhea has fallen across the board and this is in keeping with the continuing decline in incidence of this disease.

The number of pap smears submitted in Edmonton has increased 85%. Only women who have not had a Pap smear in the past year or whose last Pap smear was abnormal are offered this procedure. Since there was a small decrease in the number of patients attending the clinic, one can only conclude that the females attending the Edmonton Clinic have not had regular pap smears obtained in the past.

Table 14 Sexually Transmitted Disease Clinic Laboratory Investigation, Alberta, 1989

	Edmonton Clinic		Calgary Clinic		Ft. McMurray Clinic		Total	
	Taken	Positive	Taken	Positive	Taken	Positive	Taken	Positive
Urethral Smear - *N. gonorrhoeae*		144		52		27		223
- Non-gonococcal urethritis	3593	1307	1593	504	185	85	5371	1896
Cultures - *N. gonorrhoeae*								
Male urethra	3391	122	3338	69	181	11	6910	202
rectal	174	6	141	2	0	0	315	8
pharynx	1893	1	1173	8	38	0	3104	9
Total	**5458**	**129**	**4652**	**79**	**219**	**11**	**10329**	**219**
Female cervix/urethra	5094	117	2144	31	337	4	7575	152
rectal	4610	62	2049	18	170	0	6829	80
pharynx	2135	24	871	6	43	0	3049	30
Total	**11839**	**203**	**5064**	**55**	**550**	**4**	**17453**	**262**
Chlamydia Identification Male urethra	3784	251	3253	244	177	13	7214	508
Female cervix/urethra	3004	277	1943	142	334	21	5281	440
Darkfield Microscopy - *T. pallidum*	67	3	18	0	0	0	85	3
Herpes Simplex								
Male urethra	319	15	42	8	0	0	361	23
lesion	353	128	279	95	24	5	656	228
Total	**672**	**143**	**321**	**103**	**24**	**5**	**1017**	**251**
Female cervix	704	43	192	26	10	0	906	69
lesion	315	82	238	77	22	5	575	164
Total	**1019**	**125**	**430**	**103**	**32**	**5**	**1481**	**233**
Trichomonas vaginalis								
Male	500	16	129	0	151	0	780	16
Female	1297	105	1887	39	164	6	3348	150
Candida albicans								
Male	466	40	114	2	153	6	733	48
Female	1301	416	1897	238	164	41	3362	695
Pap Smear	862		339		0		1201	

Education Unit Activities

The education unit provides resource personnel for consultation and provision of STD/AIDS information for a wide variety of audiences. A total of 763 sessions, reflecting a 19% increase, were given, reaching 17,290 people.

There was continued support in the provision of STD/AIDS education sessions at the junior/senior high school level. Provision of the *STD Teaching Outline and Resource Guide* for teachers and health professionals across Alberta was continued.

Sessions at the post secondary level remained stable. The demand for one/one sessions for the public and professionals remained consistent with 1989.

The major focus in 1990 was to target groups that traditionally had limited access to STD information. A significant amount of work was done in the aboriginal communities including sessions in schools, for teachers, nurses and the community. A number of sessions were done jointly with the Feather of Hope Society.

For the Needleworks Project (Intravenous Drug Users Needle Exchange) an education unit staff member developed, and presented the orientation workshop for the staff and involved agencies. Other unit members had increased involvement with multicultural groups, and literacy organizations.

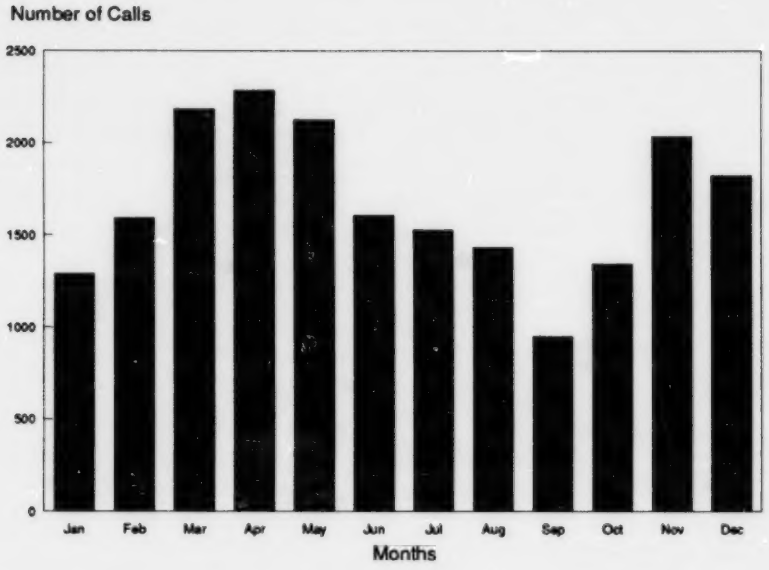
The AIDS information line has been in operation since December 1987, and has been operated by the Interactive Tone-Talker System since November 1988. The calls for 1990 averaged 1549 per month, ranging between 946 to 2284. The difference between months depends on variables such as, the number of working days in a month, advertising ie Facing AIDS campaign in March, April, May of 1990, and when one machine is removed for testing and recording. Another factor is the addition of new information to the line.

STD scripts were developed for the expansion of the AIDS Hotline to become an AIDS/STD information line. This became operational November 1, 1990. The accessibility and acceptability of the system is continually demonstrated by the stable call rate, and the fact that people call 24 hours a day from all areas of the province. The two lines for the system ensure that 95% of calls are answered the first time a call is made.

Table 15 Type of Education Session by Nurse Educators, Alberta, 1990

	Number	Number of Participants		
Schools				
Elementary	1	39		
Junior High	147	3727		
Senior High	147	3745		
Post Secondary	46	1712		
Nursing/Health Care	24	946		
Inservice				
Hospitals	139	2252		
Health Units	12	251		
Teachers	10	179		
Workplace	48	1242		
Others	42	954		
Life Skills/Adult Improvement	37	1147		
General Public	22	554	Natives only	50
Correctional Institutions (Staff & Inmates)	29	471	AIDS only	50
In House Consultation	59	71		
Total	**763**	**17290**		
By Medical Staff				
Professional Groups	32	1968		
Interviews with Media	38			
STD Clinic Clinical Experience				
Physicians/Medical Students		93		
Nursing Students		15		

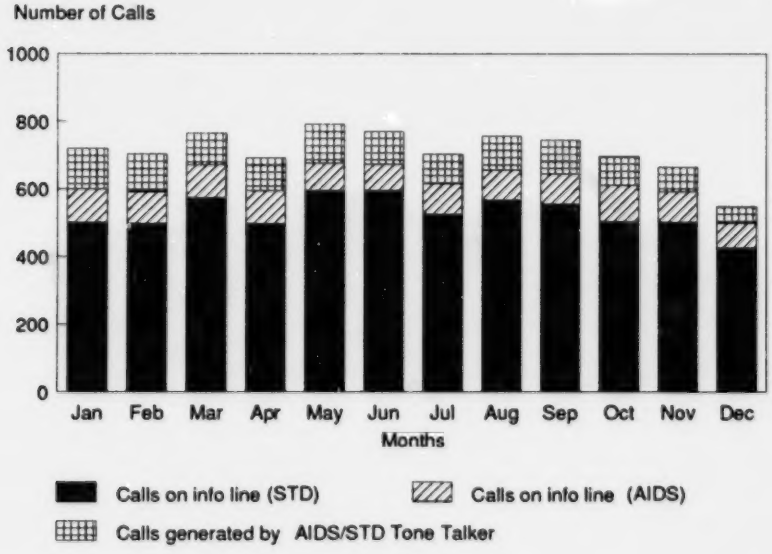
Figure 10 Information Calls to Toll Free AIDS Line, Alberta, 1990



These lines are answered 24 hours a day, seven days a week.

Notes: 1. September and October calls are skewed because only one machine in service due to equipment testing.
2. November 1 — line expanded to AIDS/STD.

Figure 11 STD Information Calls to Nurse Educators, Alberta, 1990



These lines are answered Monday – Friday:
Hours: 0815 - 1200, 1300 - 1700

Research — Clinical Investigation Unit

During 1990, the following research projects were undertaken or completed by the Clinical Investigation Unit and/or the STD Clinics.

1. Clinical Evaluation of Oral Itraconazole (R51, 211) versus Topical Clotrimazole in Treatment of Patients with Acute Vulvo Vaginal Yeast Infections.
   Principal Investigator — Dr. Barbara Romanowski
   Co-Investigator — Dr. David Megran
   Sponsor — Janssen Pharmaceutica
   Participation — Edmonton and Calgary STD Clinics, CIU

2. Double Blind Dose Ranging Study to Assess the Safety and Efficacy of Oral Famciclovir (BRL42810) in Patients with First Episode Genital Herpes Infection
   Principal Investigator — Dr. Barbara Romanowski
   Sponsor — Smith Kline Beecham Pharmaceuticals
   Participation — Edmonton STD Clinic, CIU

3. Laboratory Study of a Serology Test Kit (1PAzyme) and the Diagnosis of Chlamydial Infection in a STD Clinic Population
   Principal Investigator — Hazel Talbot
   Sponsor — Miles Canada Inc
   Participation — Edmonton STD Clinic, CIU

4. Randomized Clinical Trial of Minocycline Versus Doxycycline in the Treatment of Non-gonococcal Urethritis and Mucopurulent Cervicitis
   Principal Investigator — Dr. Barbara Romanowski
   Sponsor — Lederle Pharmaceuticals
   Participation — Edmonton STD Clinic, CIU

5. Comparative Study of Active Versus Passive Contact Tracing in STD Clinic Patients
   Principal Investigator — Dr. Edward Love, University of Calgary
   Sponsor — STD Research Fund
   Participation — Edmonton and Calgary STD Clinics

6. Identification and Characterization of the Human Immune Response to the Transferrin and Lactoferrin Receptors of *Neisseria gonorrhoeae*
   Principal Investigator — Dr. Craig Lee, University of Calgary
   Co-Investigator — Dr. David Megran
   Sponsor — Alberta Heritage Foundation for Medical Research
   Participation — Calgary STD Clinic, University of Calgary

Appendix 1 **Cases of Notifiable Diseases by Age and Sex, Alberta, 1989 (Corrected Report)**

	< 1		1 – 4		5 – 9		10 – 14		15 – 19		20 – 24		25 – 29		30 – 39		40 – 59		60 +		Age N/S		Total
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
Gonorrhea		1		1		4	4	15	172	152	396	340	271	159	215	76	71	15	9	1	9	6	2217
Chlamydia	6	7	5	9		8	7	70	344	2218	756	2128	501	813	285	367	57	70	6	6	17	47	7727
NGU/MPC							3	14	314	362	892	465	794	262	625	186	201	41	13	1	84	20	4277
Syphilis (Total)										2	5	2	5	3	12	5	19	8	7	6			74
Primary										1	1				1		4						7
Secondary												1		1	1		2						5
Early Latent										1	2		2	1	1		1						8
Late Latent											1	1	3	1	9	5	12	8	6	6			52
Neuro Syphilis											1								1				2
Congenital																							
Total	**6**	**8**	**5**	**10**	**0**	**12**	**14**	**99**	**830**	**3034**	**2849**	**2935**	**1571**	**1237**	**1137**	**634**	**348**	**134**	**35**	**14**	**110**	**73**	**14295**

Gonorrhea	Male	1147	NGU/MPC	Male	2926	Syphilis	Male	48		
	Female	1070		Female	1351		Female	26		
Chlamydia	Male	1984								
	Female	5743								

Appendix 2 **Cases of Confirmed *Neisseria gonorrhoeae* According to Reporting Agency by Age and Sex, Alberta, 1990**

	<1		1–4		5–9		10–14		15–19		20–24		25–29		30–39		40–59		60+		Age N/S		Total
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
Physician						2		13	58	185	150	176	86	77	77	46	28	8	7		2	3	918
Edmonton Clinic								2	13	27	31	28	35	7	34	9	10	2	5		1		204
Calgary Clinic									10	27	17	16	17	5	26	3	2	2					125
Ft. McMurray Clinic									5	3	7	3	6		4		2						30
Positive Culture				1		1			8	12	17	16	14	7	6	10	4	4			1	2	103
Total				**1**		**3**		**15**	**94**	**254**	**222**	**239**	**158**	**96**	**147**	**68**	**46**	**16**	**12**		**4**	**5**	**1380**

Appendix 3 **Confirmed Cases of *Chlamydia trachomatis* According to Reporting Agency by Age and Sex, Alberta, 1990**

	<1		1–4		5–9		10–14		15–19		20–24		25–29		30–39		40–59		60+		Age N/S		Total
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
Physician	3	3	2	8		1	2	63	185	1784	496	1808	277	678	164	264	28	36	5	9	9	25	5850
Edmonton Clinic								3	42	106	98	90	53	30	52	25	10	5	1				515
Calgary Clinic								3	26	74	119	71	61	21	39	12	9	1					436
Ft. McMurray Clinic								1	3	6	4	5	5	2	1								27
Positive Culture	7	3	1	3	1		2	15	15	162	43	155	32	65	20	37	6	6			2	9	584
Total	**10**	**6**	**3**	**11**	**1**	**1**	**4**	**85**	**271**	**2132**	**760**	**2129**	**428**	**796**	**276**	**338**	**53**	**48**	**6**	**9**	**11**	**34**	**7412**

Appendix 4 **Cases of Confirmed Non-Gonococcal Urethritis/Mucopurulent Cervicitis According to Reporting Agency by Age and Sex, Alberta, 1990**

	< 1		1 – 4		5 – 9		10 – 14		15 – 19		20 – 24		25 – 29		30 – 39		40 – 59		60 +		Age N/S		Total
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
Physician							5	2	146	145	393	157	279	82	209	61	66	15	5		58	16	1639
Edmonton Clinic							1	3	56	78	207	121	239	69	231	48	107	16	12				1188
Calgary Clinic									61	52	133	94	133	60	111	36	44	13	1	1			739
Ft. McMurray Clinic								3	15	23	18	13	20	10	15	4	5					1	127
Total							**6**	**8**	**278**	**298**	**751**	**385**	**671**	**221**	**566**	**149**	**222**	**44**	**18**	**1**	**58**	**17**	**3693**